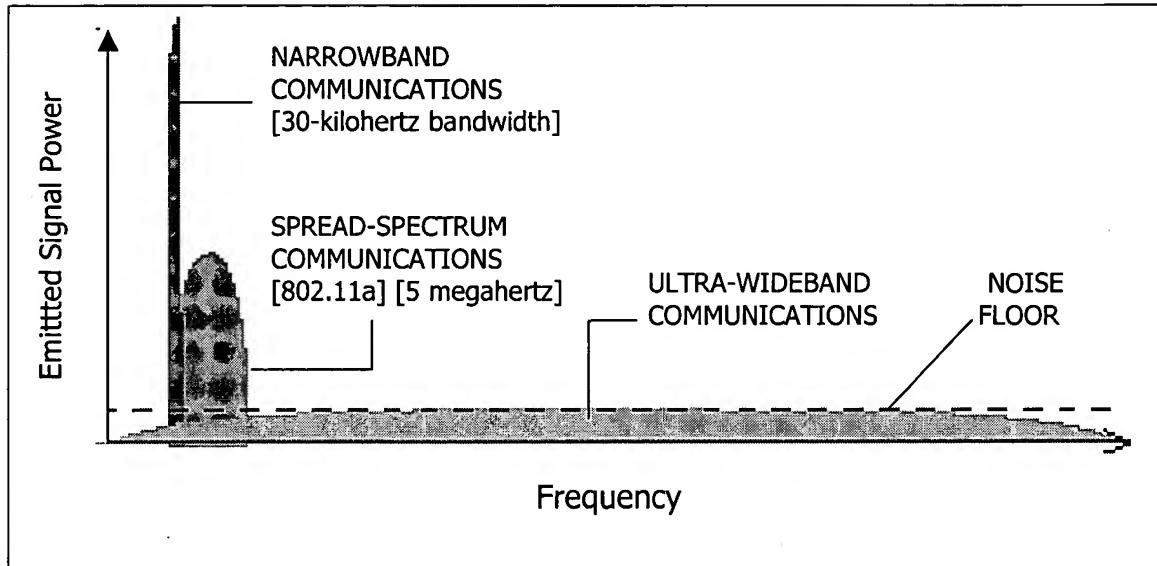
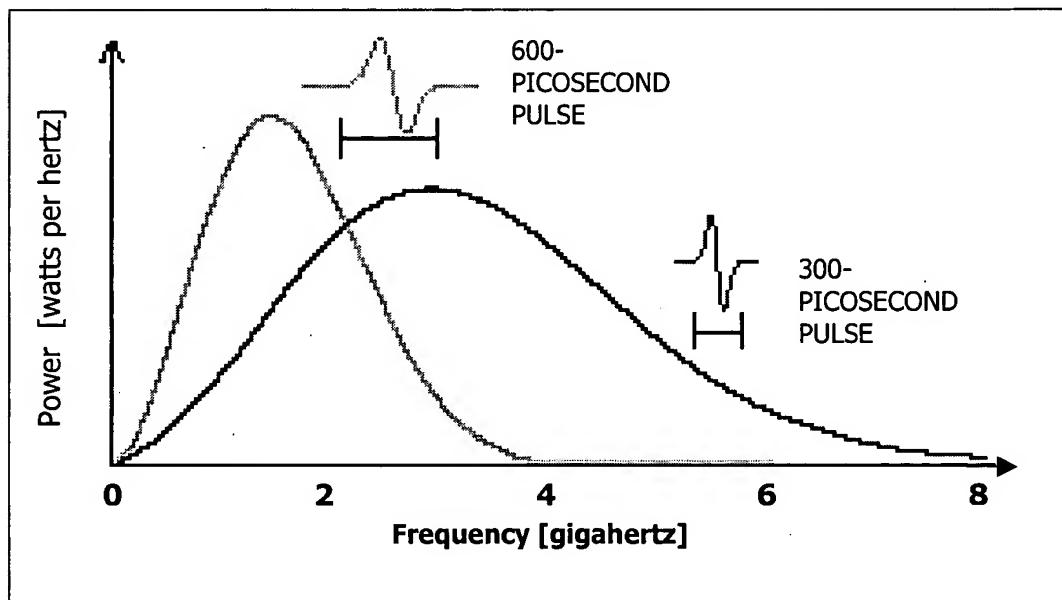


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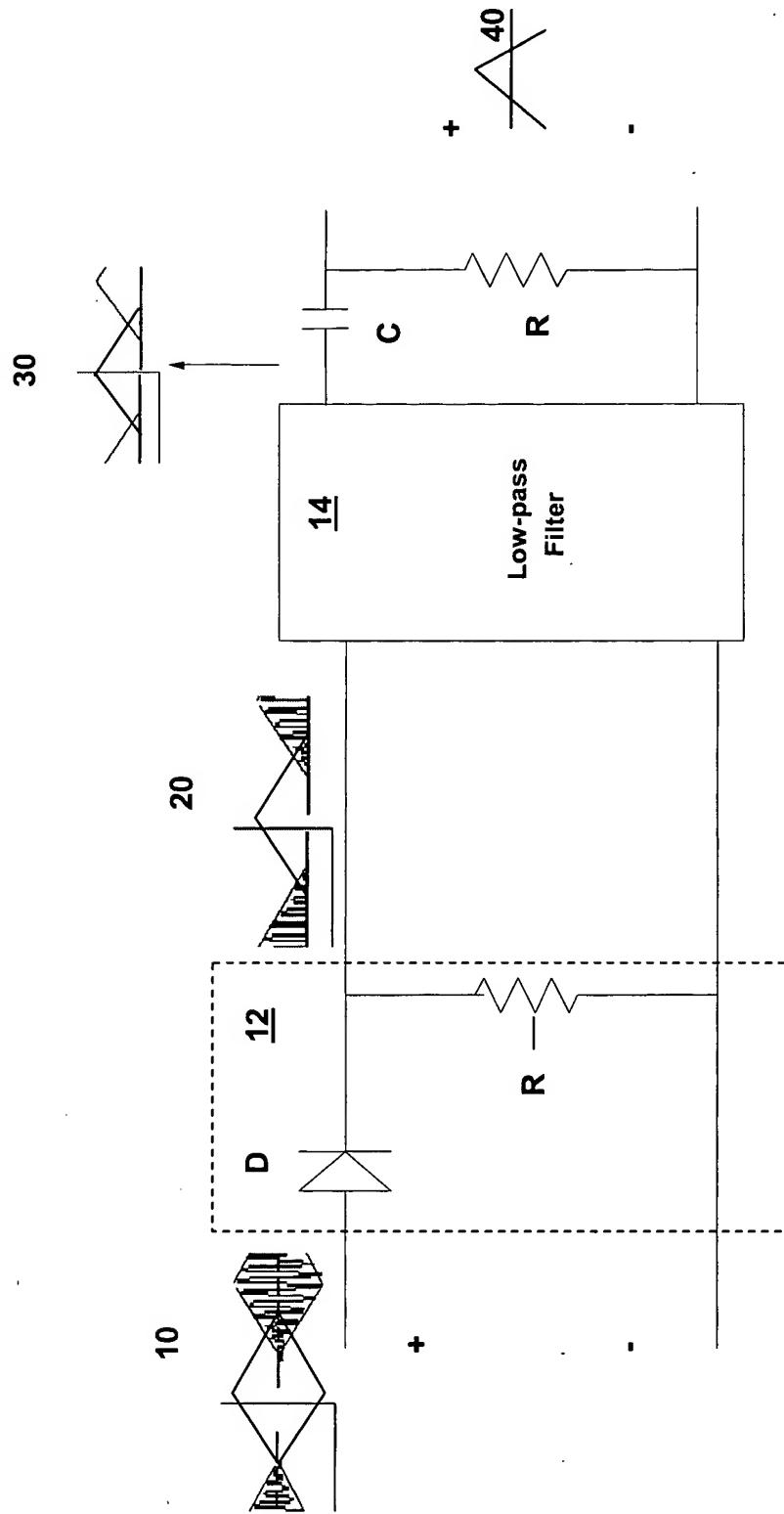


**FIG. 1**



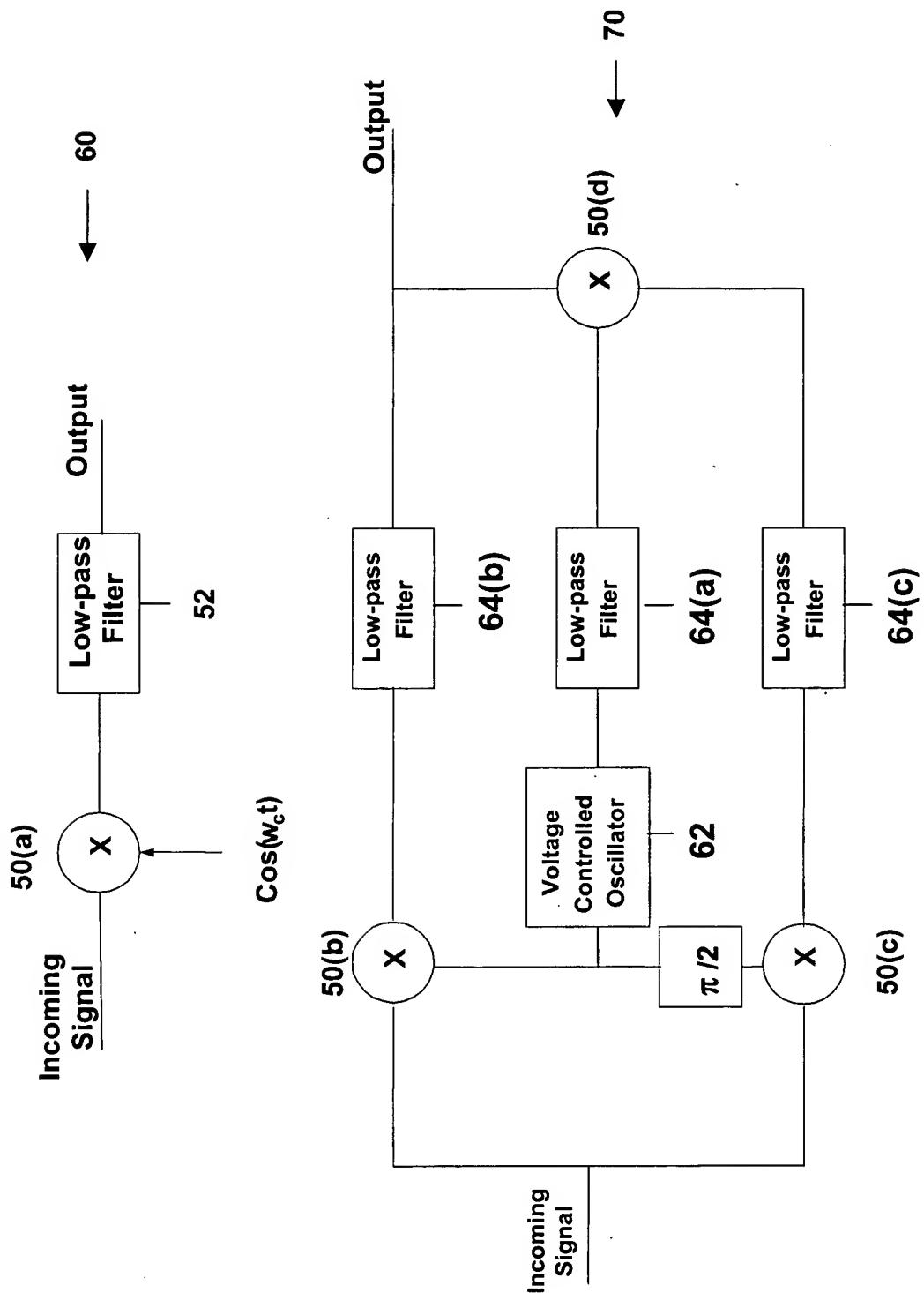
**FIG. 2**

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**FIG. 3**  
PRIOR ART

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**FIG. 4**  
PRIOR ART

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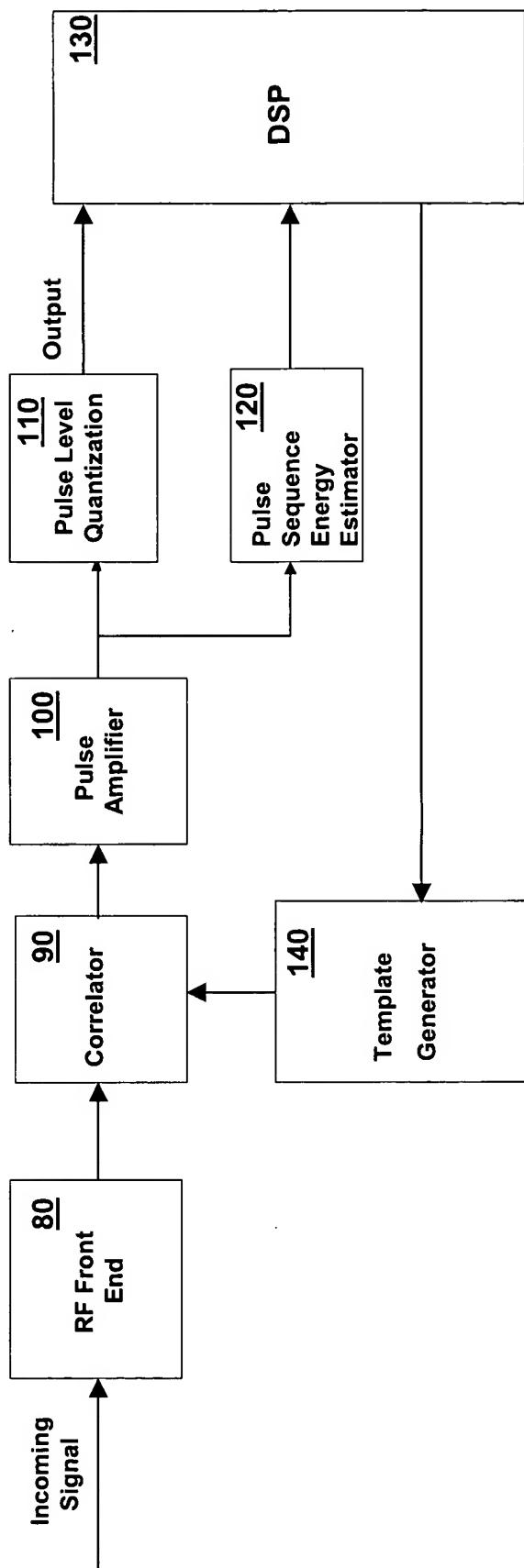
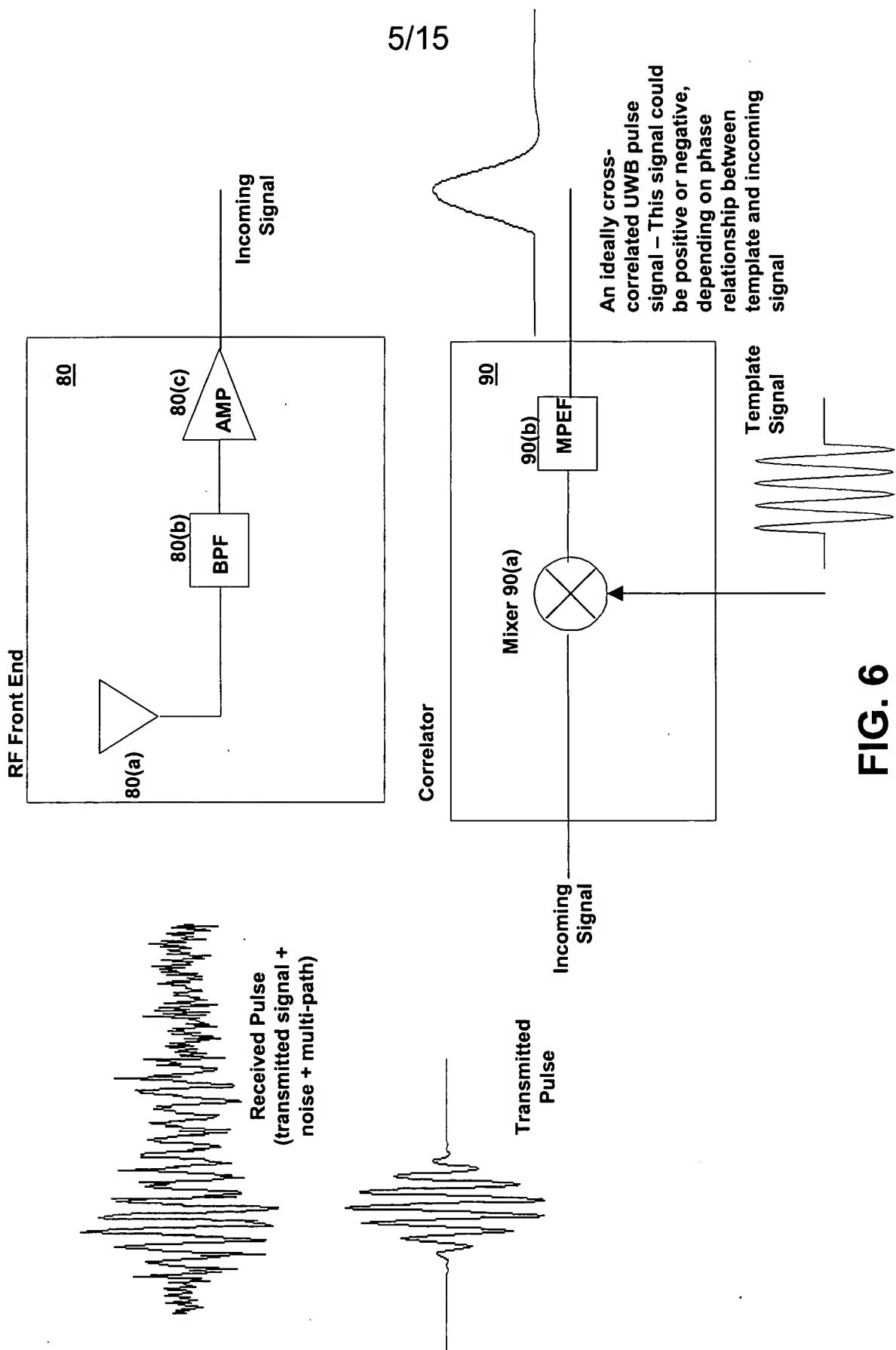


FIG. 5

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**FIG. 6**

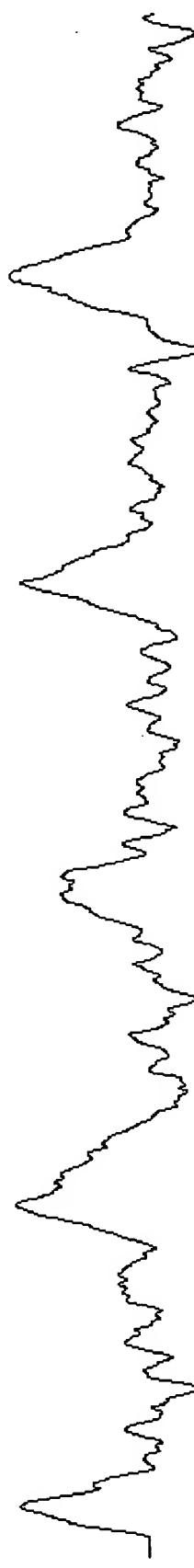
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PERFORMANCE OF DIFFERENT RECEIVERS IN THE PRESENCE OF  
WHITE NOISE AND MULTIPATH REFLECTION

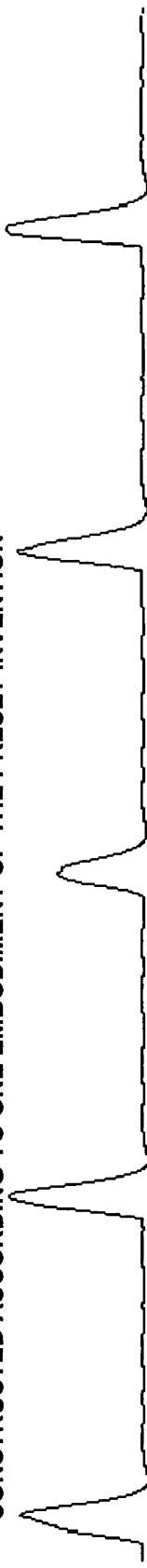
A. SQUARE LAW DETECTOR RECEIVER



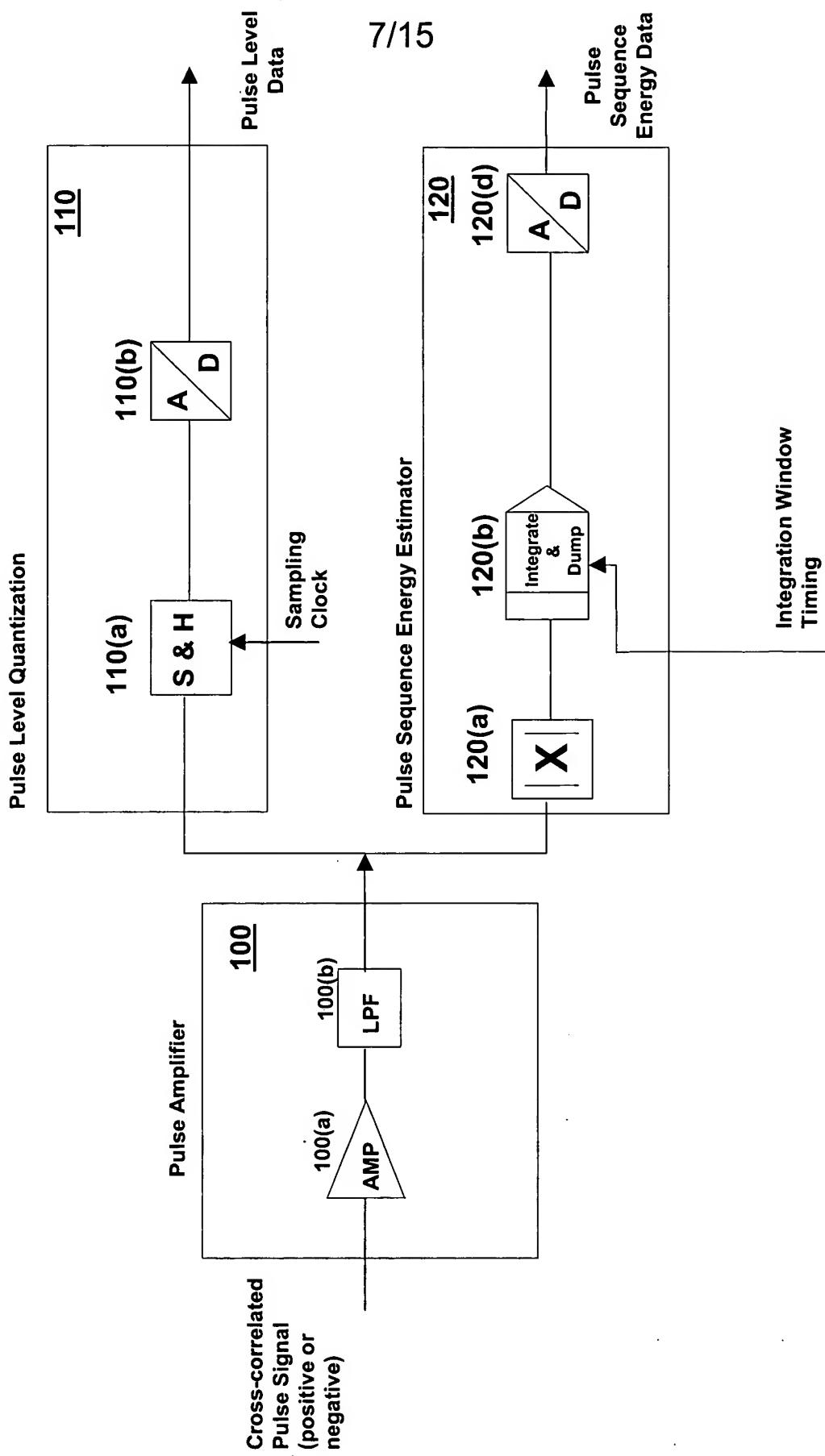
B. DIRECT CONVERSION RECEIVER



C. ULTRA-WIDEBAND PULSE TEMPLATE CORRELATION RECEIVER  
CONSTRUCTED ACCORDING TO ONE EMBODIMENT OF THE PRESENT INVENTION



**FIG. 7**



**FIG. 8**

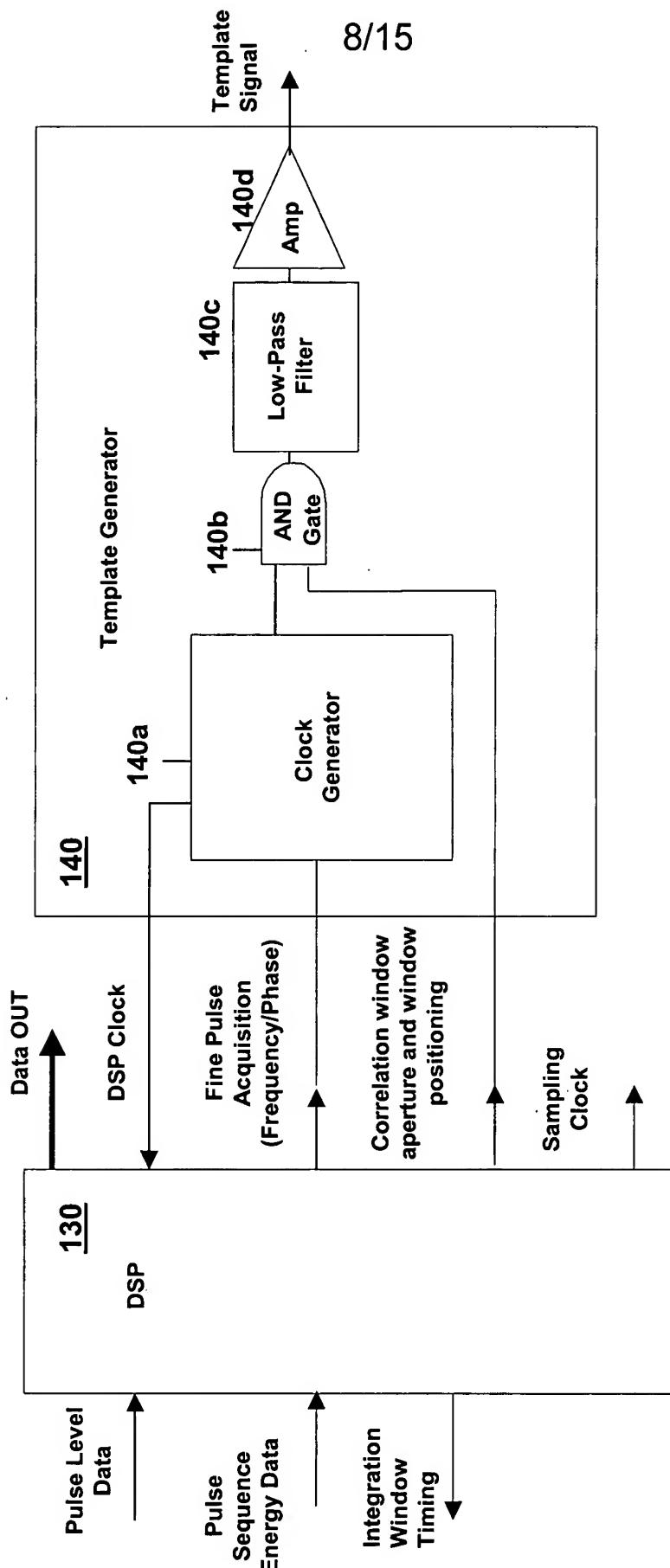
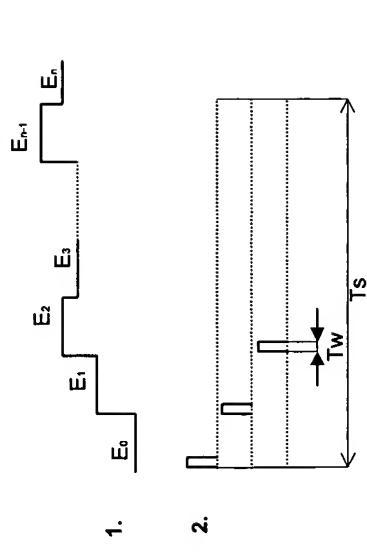


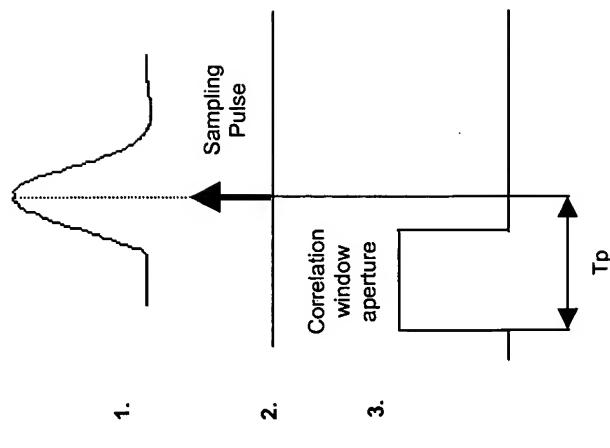
FIG. 9

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10A. PULSE SIGNAL COARSE ACQUISITION PROCESS



10C. PULSE SAMPLING



10B. PULSE SIGNAL FINE ACQUISITION METHOD

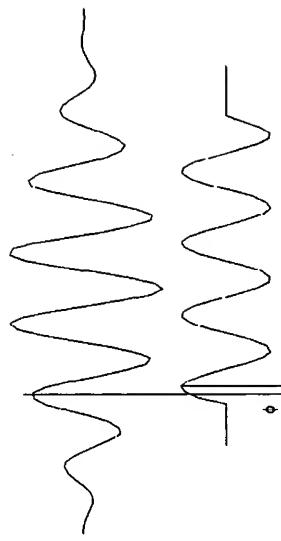
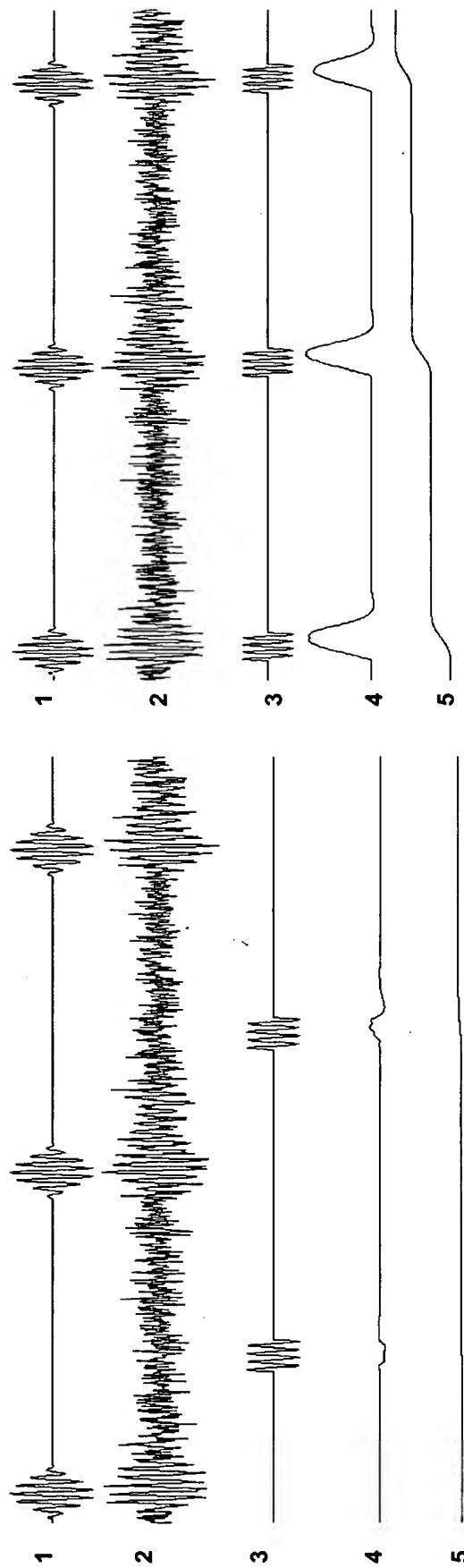
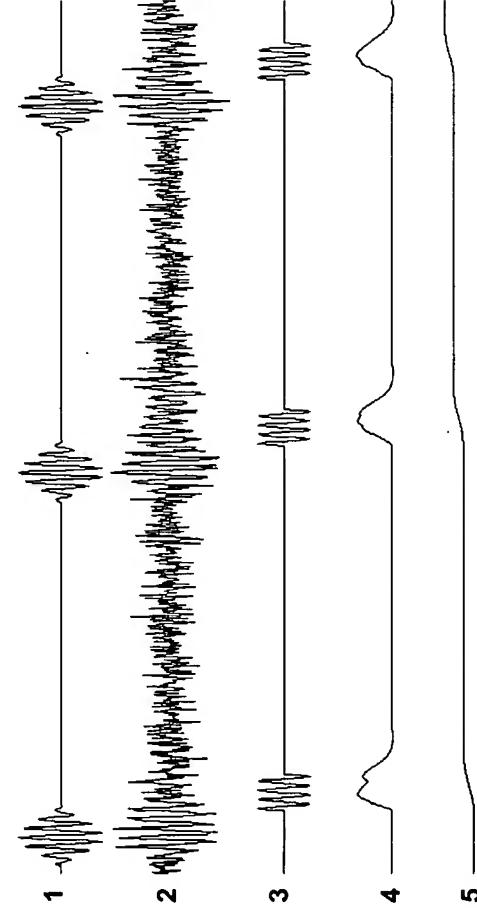


FIG. 10

ULTRA-WIDEBAND (UWB) PULSE ACQUISITION PROCESS IN  
PRESENCE OF MULTIPATH AND NOISE



A) N UWB Pulse is Detected – UWB Pulse Sequence Energy is Near  
Zero ; Synchronization Loop is Unlocked



B) Weak Multi-path UWB Pulse is Detected – UWB Pulse Sequence  
Energy is increased; Synchronization Loop is Unlocked

C) Receiver is Locked to The Strongest Path –  
UWB Pulse Sequence Energy is at Highest Level

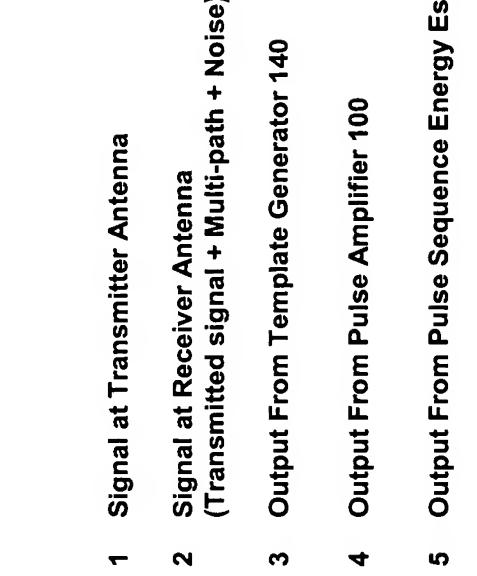


FIG. 11

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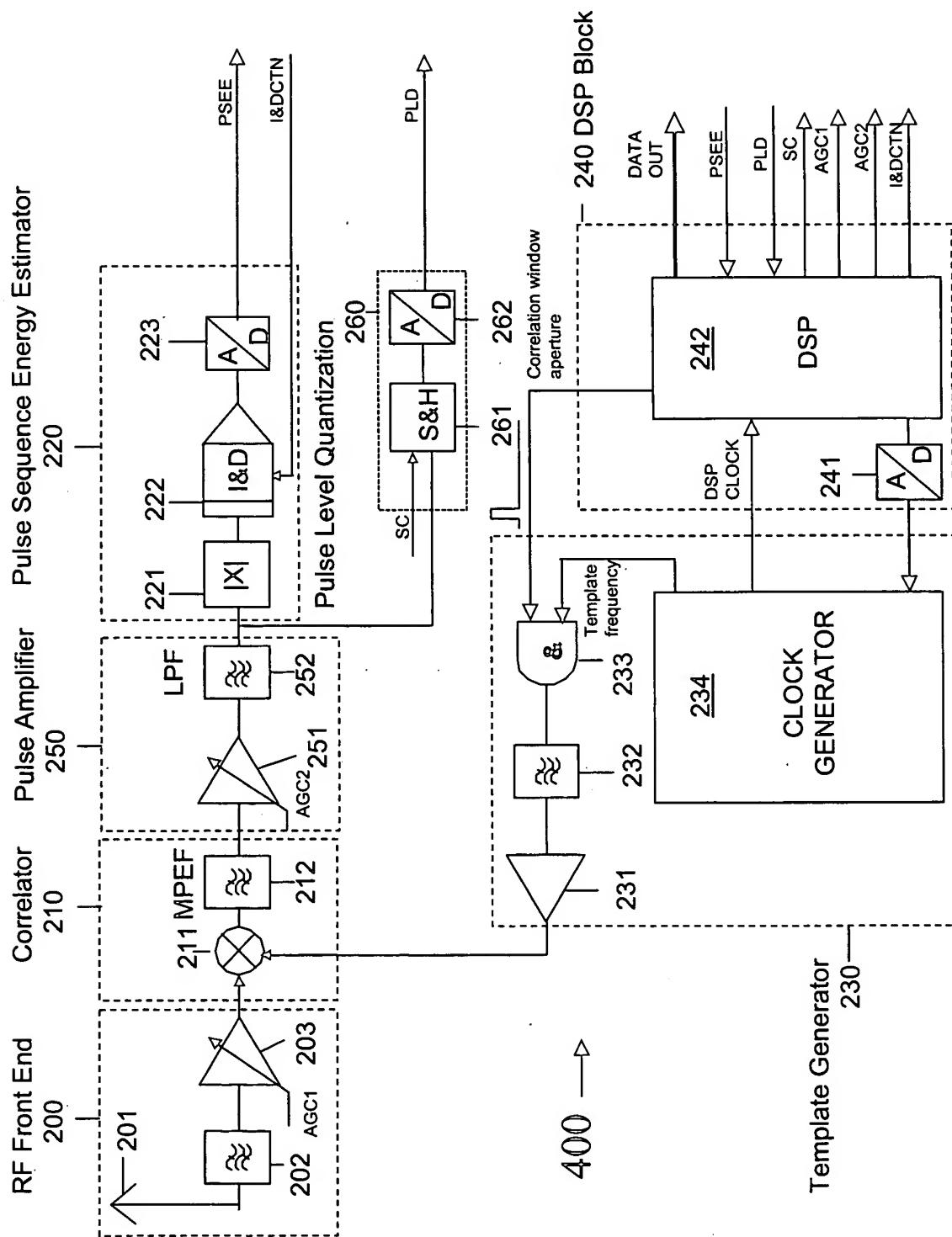
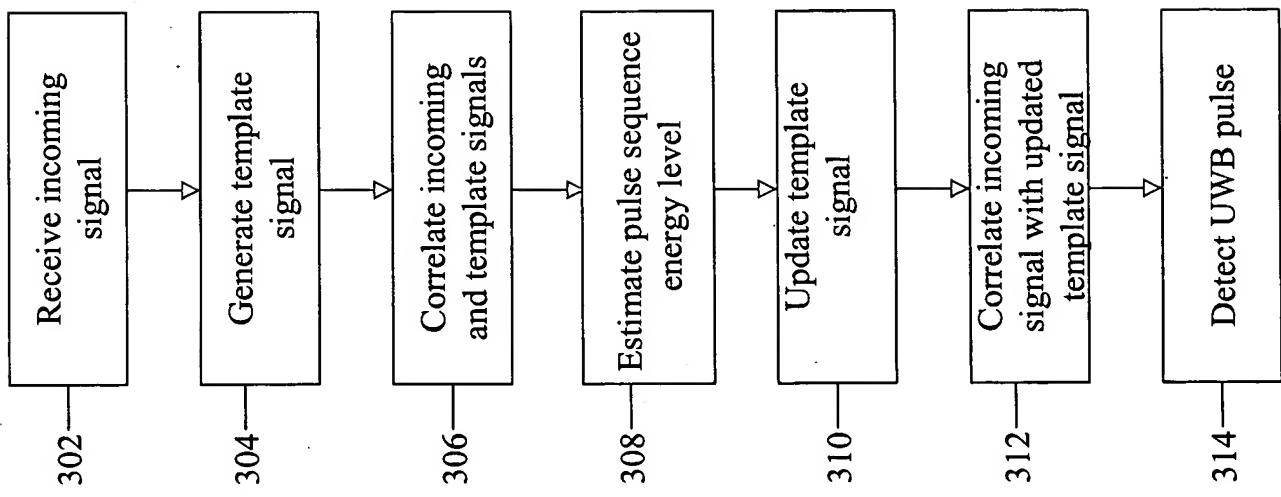


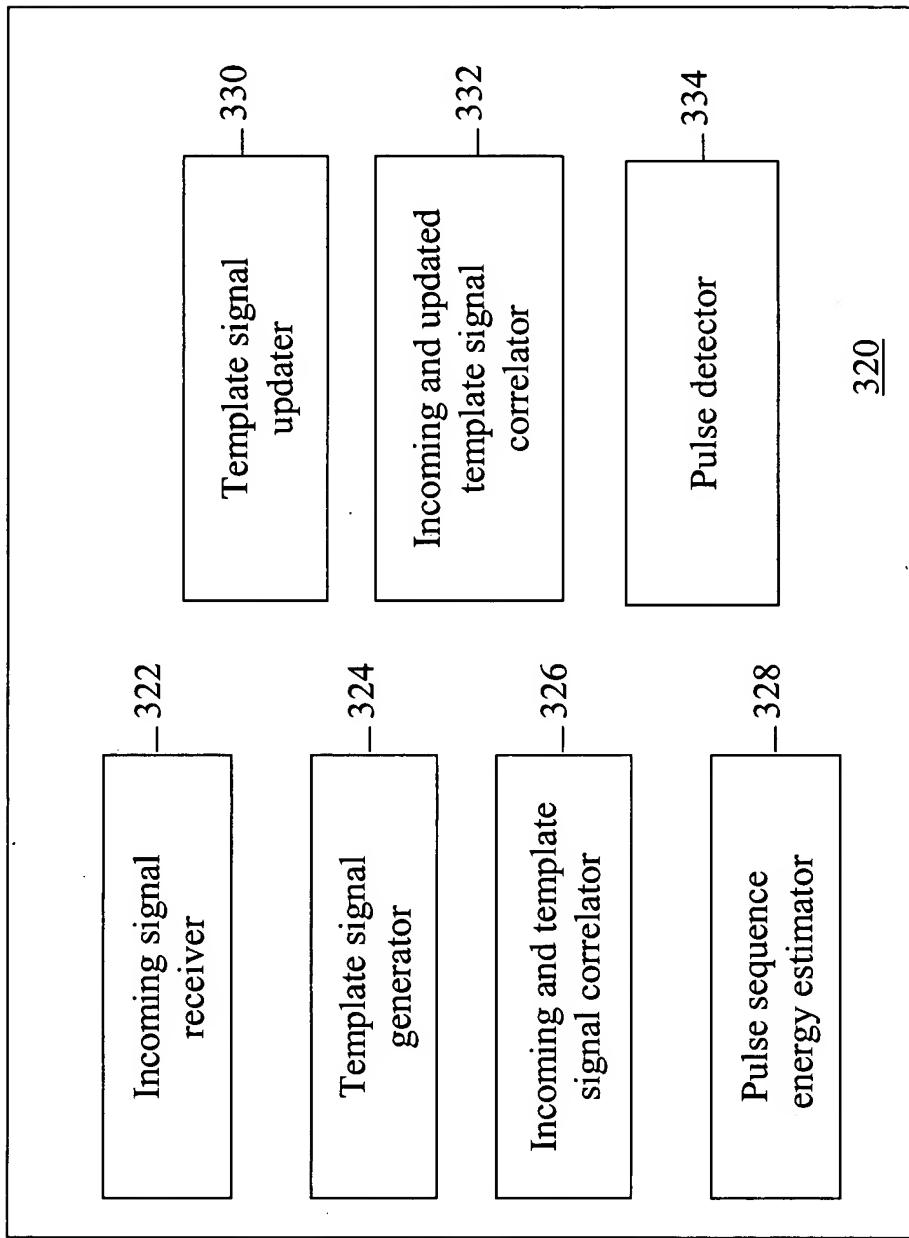
FIG. 12

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FIG. 13



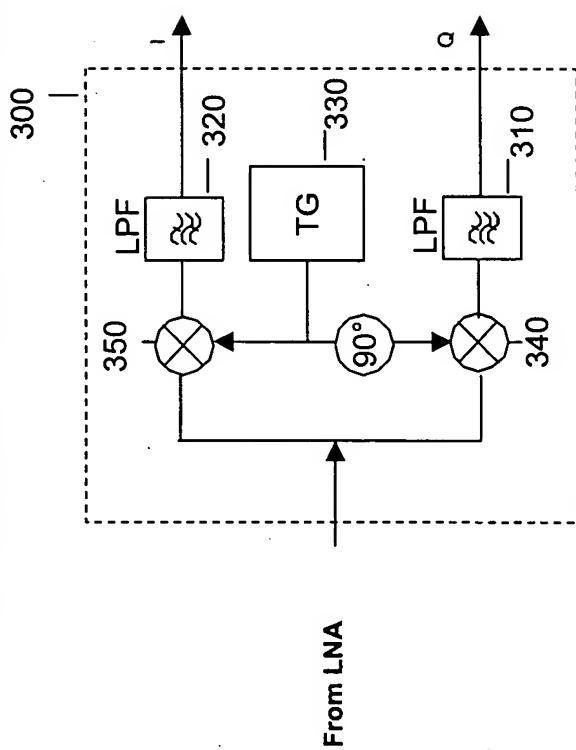
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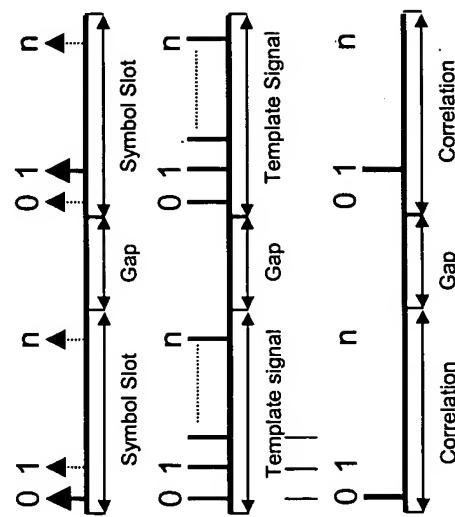
**FIG. 14**

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15A. Quadrature Correlator- M-ary PSK Detection



15B. Detection of M-ary PPM/OOK MODULATION



**FIG. 15**

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FIG. 16

